**Small Business Innovation Research/Small Business Tech Transfer**

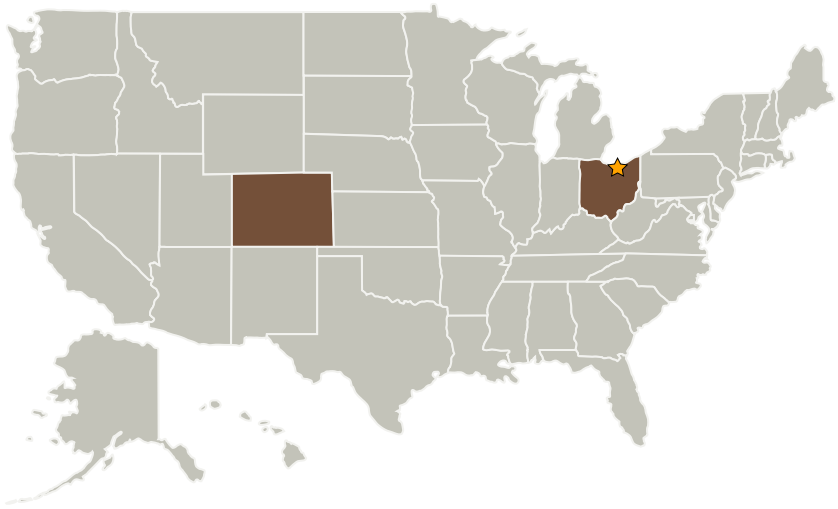
# Highly Durable Catalysts for Ignition of Advanced Monopropellants, Phase I

Completed Technology Project (2006 - 2006)

## Project Introduction

This proposed SBIR Phase I addresses the development of catalysts and technology for the ignition of advanced monopropellants consisting of mixtures of hydroxylammonium nitrate (HAN) and a combustible component. The catalysts will possess intrinsic activity for ignition and will also possess requisite thermal stability and erosion resistance. Minimal delay times will be achieved by the catalyst composition and enhanced surface area, which will accelerate rate limiting steps of ignition. Phase I will consist of the synthesis and physical characterization of catalysts, evaluation of catalyst activity, initial optimization of composition and preparation of catalysts, and testing in a combustion chamber. In Phase II, the preferred catalyst(s) will be optimized, synthesized in larger quantities, and subjected to more rigorous and extensive testing in a device. The goal of the proposed program will be to develop a catalyst exhibiting a low ignition temperature, but also possessing the favorable attributes described above. Successful development of such catalyst technology will lead to applications in a number of propulsion-related devices.

## Primary U.S. Work Locations and Key Partners



| Organizations Performing Work | Role | Type | Location |
|---|---|---|---|
| ★Glenn Research Center(GRC) | Lead Organization | NASA Center | Cleveland, Ohio |
| Eltron Research & Development, Inc. | Supporting Organization | Industry | Boulder, Colorado |


Highly Durable Catalysts for Ignition of Advanced Monopropellants, Phase I

## Table of Contents


Project Introduction 1
Primary U.S. Work Locations and Key Partners 1
Organizational Responsibility 1
Project Management 2
Technology Areas 2


## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Center / Facility:**

Glenn Research Center (GRC)

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

# Highly Durable Catalysts for Ignition of Advanced Monopropellants, Phase I

Completed Technology Project (2006 - 2006)

| Primary U.S. Work Locations | |
|---|---|
| Colorado | Ohio |

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

## Technology Areas

**Primary:**

- TX13 Ground, Test, and Surface Systems
  - TX13.2 Test and Qualification
    - TX13.2.7 Test Instruments and Sensors